

REMARKS

The following is intended as a full and complete response to the Final Office Action dated January 18, 2008. Claims 32-35 are rejected under the second paragraph of 35 USC §112. Claims 1-3, 5-10, 13-25, 27, 32-38, and 40 are rejected under 35 USC §103(a) as unpatentable over Pinkerton (US Pub. No.: 2006/0069792) in view of Boyd (US Pub. No.: 2004/0049601) and Lanteigne (US Patent No.: 6,757,756). Claims 4, 39, and 41 are rejected under 35 USC §103(a) as unpatentable over Pinkerton in view of Boyd and Lanteigne and further in view of Boucher (US 6,436,620). Claims 11, 12 and 26 stand rejected under 35 USC §103(a) as unpatentable over Pinkerton in view of Boyd and Lanteigne and further in view of Meyer (US Pub. No.: 2002/0145976). These rejections are respectfully traversed.

Claim 36 is cancelled and claims 32-35 are amended to provide proper antecedent basis by replacing "pointer" with "bit in the entry" and "unit" with "ring." The scope of amended claims 32-35 is similar to the scope of the previously presented claims. Therefore, these amendments don't raise any new issues. Claim 37 is amended to replace "A method as claims in" with "The method of claim."

Claims 1, 7, 16, and 22 each recite the limitation of a bit in every entry of the (command or notification) ring that indicates an owner of each one of the entries. Claim 1 also recites the limitation of setting the bit in the entry by the offload unit to indicate the owner of entry is the TCP stack. Additionally, claim 7 recites the limitation of the offload unit writing to the notification ring and indicating that the TCP stack is the owner of the entry that is written. Similarly, claim 16 recites the limitation the offload unit setting the bit indicating the TCP stack is the owner in any entries that are read by the offload unit. Finally, claim 22 recites the limitations of an offload unit that indicates by a bit an owner of each entry written by the notification unit as the TCP stack, the TCP setting the bit indicating that the offload unit is the owner in any entries in the notification ring that are read by the TCP stack, and the TCP stack indicating by a bit an owner of each entry of a command ring that is written by the TCP stack as the offload unit.

The Pinkerton reference does not teach storing a bit in each entry of a command ring, which is a primary feature recited in claims 1, 7, 16, and 22, for passing commands and notification descriptors between the TCP stack and the offload unit. Rather,

Pinkerton teaches that a DELEGATED variable may be owned by the host or offload unit (see paragraph [0041]). However, the DELEGATED variables are written by the host to the offload unit and read back from the offload unit by the host. The DELEGATED variables are not passed between the host and offload unit through a command or notification ring. Importantly, ownership of the DELEGATED variables is changed from the host to the offload unit when a connection is offloaded, and ownership only reverts to the host when offloading of the connection is terminated.

Pinkerton also teaches that the offload unit produces a linked list of parameters and dispatch tables (see paragraph [0052]) that is inserted in a completion message. The parameters may be used to provide communication channels with the offload unit. However, there is no ownership associated with the parameters, dispatch tables, or communication channels. When the linked list is generated (following offloading) and during any communications with the offload unit, the ownership of the DELEGATED variable is not set to the TCP stack. Nowhere does Pinkerton teach or suggest indicating ownership of any of the entries in the linked list. In particular, Pinkerton fails to teach or suggest that a bit in an entry in a command or notification ring is set to indicate the owner of the entry is the TCP stack, as recited in claims 1, 7, 16, and 22.

To provide a teaching of the command ring, the Examiner cites Boyd at page 9, paragraph [0118]. However, this section, and the rest of the reference in its entirety, only teaches the existence of a circular linked list that stores pointers. A ULP monitors the entries in the linked list and uses a credit-based mechanism to control reading from and writing to the linked list. Nowhere does Boyd teach or suggest indicating ownership within each entry of the circular linked list. Like Pinkerton, Boyd also fails to teach or suggest that a bit in an entry in a command or notification ring is set to indicate the owner of the entry is the TCP stack, as recited in claims 1, 7, 16, and 22.

To provide a teaching of the bit in each entry that indicates an owner of each entry, the Examiner cites Lanteigne, relying on the teaching of read and write pointers of a control ring buffer that are owned by processes. The Examiner concludes that it would have been obvious to indicate ownership of each entry using the write and read pointers. A review of the Lanteigne reference, specifically column 9, lines 29-36, shows that there is one read pointer and one write pointer. Therefore, the read pointer and

write pointer indicate ownership of two entries in the control ring buffer, not every entry, as recited in claims 1, 7, 16, and 22. Furthermore, Lanteigne teaches that a process must “gain ownership” of the read or write pointer in order to access an entry (see column 13, lines 47-59). After accessing the entry the process “gives up ownership” to permit another process to access an entry of the control ring buffer. Importantly, the processes do not set a bit in an entry indicating that another process has ownership of an entry.

Other references cited by the Examiner include Boucher and Meyer. These other references fail to cure the deficiencies of Pinkerton, Boyd, and Lanteigne relative to claims 1, 7, 16, and 22. Meyer is relied on for teaching a flag that indicates an acknowledgement threshold is reached. Meyer teaches a method of triggering retransmission of data segments when duplicate acknowledgements are received. Boucher is relied on for teaching a value representing a number of buffers that are accepted by the offload unit, a synchronization pointer, and flushing unused buffer descriptors. Boucher teaches synchronization of data passed across a clock boundary. Boucher does not teach a synchronization bit that is used to enable the offload unit to accept user buffer descriptors, as recited in claims 39 and 41 of the present application. Neither Boucher nor Meyer teach or suggest the limitation of a bit in an entry in a command or notification ring is set to indicate the owner of the entry is the TCP stack, as recited in claims 1, 7, 16, and 22.

As the foregoing illustrates, no combination of the references cited by the Examiner can render independent claims 1, 7, 16, and 22 obvious. Further, since claims 2-6 and 32-35, 36-37, 39-41 depend from allowable claim 1, these claims are also patentable over any combination of the references cited by the Examiner. Claims 8-15, 17-21, and 23-27 and 38 depend from allowable claims 7, 16, and 22, respectively, and are therefore also patentable over any combination of the references cited by the Examiner.

Conclusion

Based on the above remarks, Applicants believe that they have overcome all of the rejections set forth in the Final Office Action mailed on January 18, 2008 and that the pending claims are in condition for allowance. If the Examiner has any questions, please contact the Applicants' undersigned representative at the number provided below.

Respectfully submitted,



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